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(54) Abstract Title
Short ignition time, long burn time fuel package

(57) A fuel package which comprises:
a combustible outer container (1); enclosed within the outer container a charge of solid fuel pieces (4) and a readily ignitable particulate starter fuel; and a perforated, combustible separator layer (5) disposed between the solid fuel pieces and the readily ignitable, particulate starter fuel.

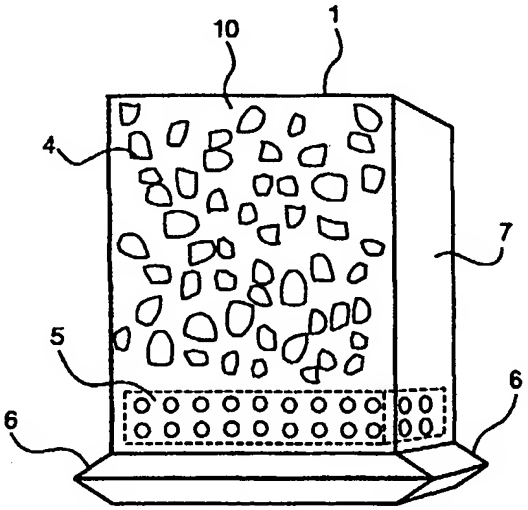

Fig. 4

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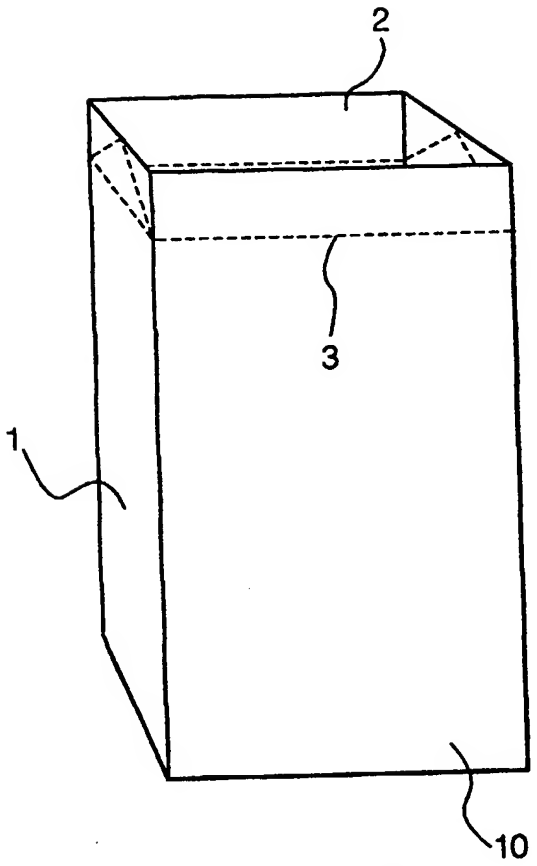


Fig. 1

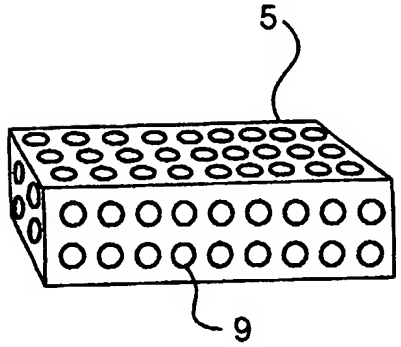


Fig. 2

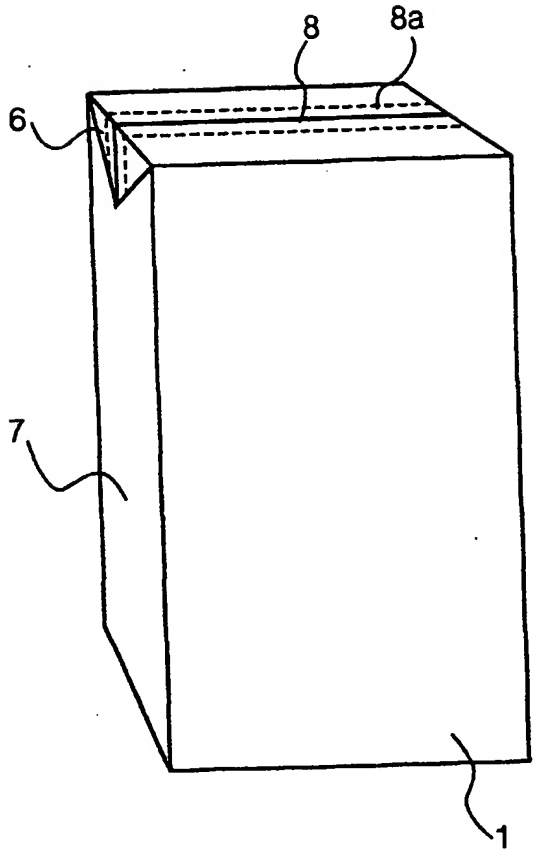


Fig. 3

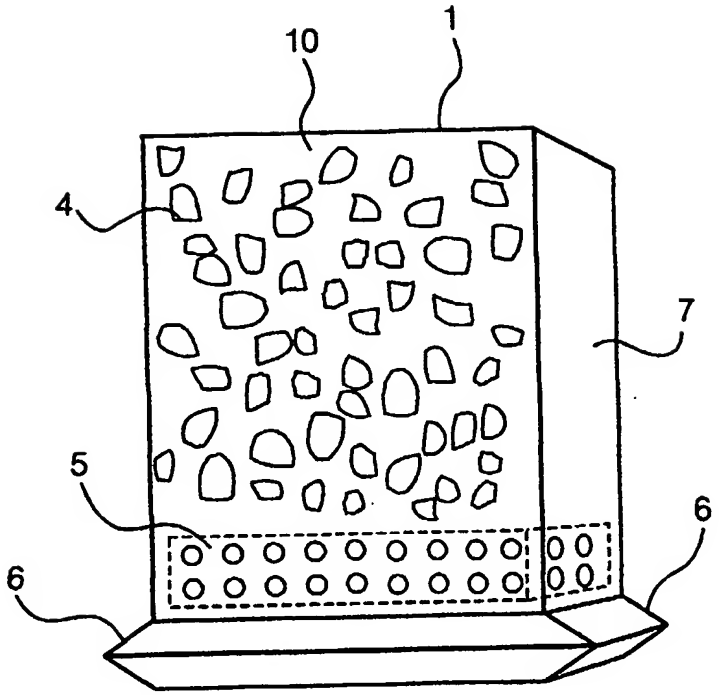
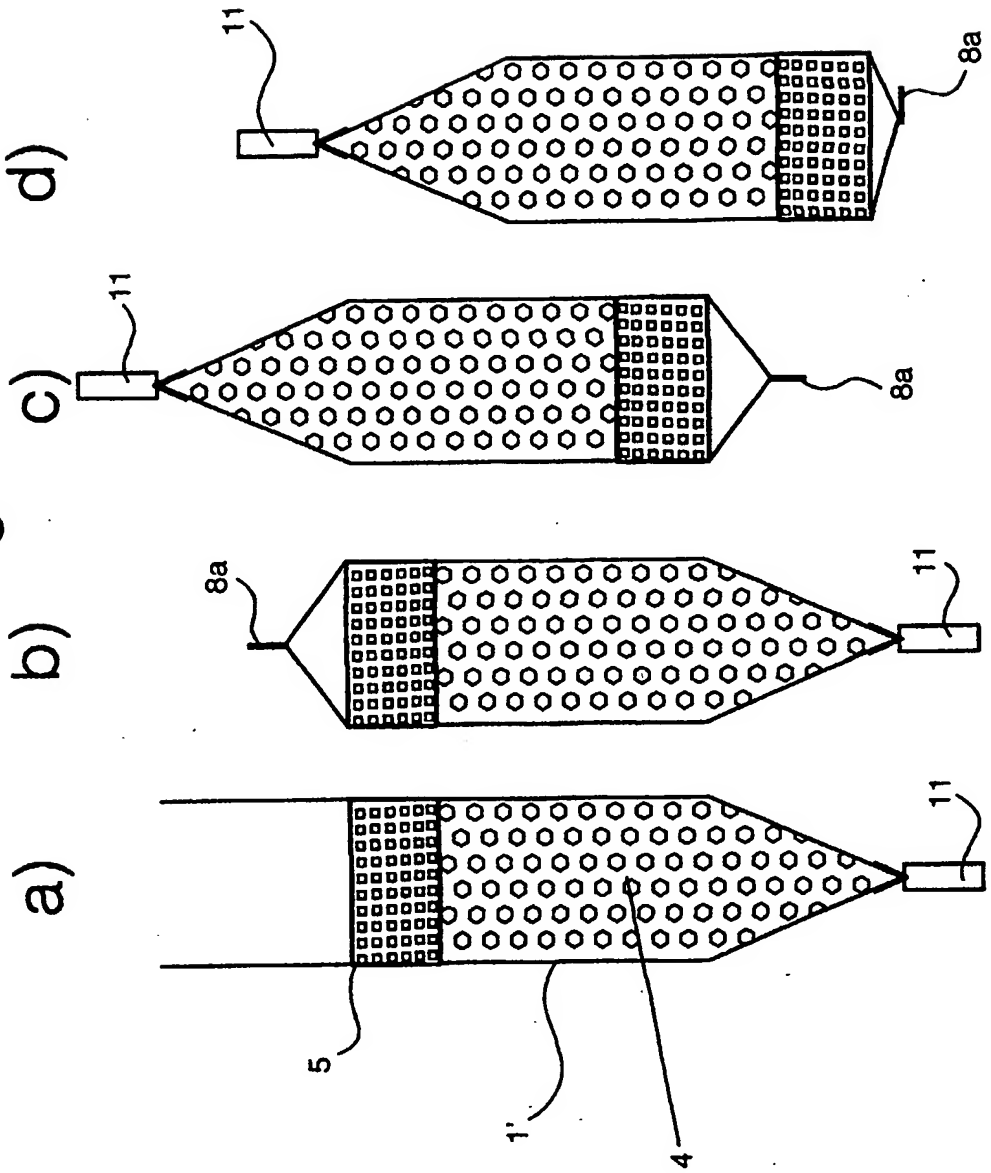


Fig. 4

Fig. 5



IMPROVEMENTS IN OR RELATING TO FUEL PACKAGES

This invention relates to fuel packages and more particularly to a fuel package adapted for starting or making a fire.

Fuel packages, either for starting or making open fires, are well known. A typical fuel package comprises solid fuel pieces enclosed within a combustible container, for example, a paper sack. Such fuel packages, particularly when damp, can be difficult to ignite and often require the use of firelighters, wood, and/or additional paper to start the fire. Starting the fire can often result in the production of clouds of dense smoke, or may require the use of fire lighters comprising odoriferous petroleum derivatives such as kerosene and petroleum waxes.

With conventional fuel packages the ignition time, which is defined herein as that period elapsing between the first lighting of the fire and the achievement of a standard radiant output from the fire, is often considerable and can be up to 40 minutes or more in some cases. The factors which determine the ignition time include the properties of the fuel components (for example coals and cokes), the proportions in which they are present in the fuel package, the shape and mass of the fuel pieces (for example particles or briquettes), the presence or absence of a binder and the moisture content of the fuel.

Fuel packages have many advantages, in particular the elimination or reduction of the risk of dirt and dust from the fuel contaminating home furnishings, but hitherto the problem of relatively long ignition times has tended to limit their market appeal. A reduction in

the ignition time would clearly be very desirable.

It has been found that a major portion of the heat used in the ignition of a solid fuel fire is frequently employed simply to evaporate any moisture present. Until the moisture has been substantially reduced the ignition source is unable to increase the temperature of the fuel to that required for the fuel itself to start burning. Once the fuel has ignited then fire output generally increases rapidly.

In US4775391 there is disclosed a fuel package which comprises a moisture proof combustible container which contains a charge of fuel pieces in a specific shape and a combustible binder/starter composition which holds at least a large portion of the fuel pieces together in a stack to promote combustion. Although such a fuel package may possibly give some reduction in ignition time the combustible binder/starter compositions suggested still involve odoriferous kerosene based formulations. Manufacture of the prior art fuel package is also likely to be relatively complicated and reproduceability somewhat uncertain.

In GB2204057 a firelighter/solid fuel assembly is disclosed which comprises a plurality of blocks of readily ignitable material (suitably of curvilinear cross-section) arranged within and enclosed by a package of combustible material. Another solid fuel, which is not readily ignitable, may also be present within the package and in contact with the readily ignitable material. Again any improvement in ignition time is likely to be marginal and the readily ignitable material also comprises a kerosene based formulation.

According to the present invention there is provided a fuel package which can provide a ready made fire with a reduced ignition time.

In one aspect the present invention provides a fuel package which comprises: a combustible outer container; enclosed within the outer container a charge of solid fuel pieces and a readily ignitable particulate starter fuel; and a perforated, combustible separator layer disposed between the solid fuel pieces and the readily ignitable, particulate starter fuel.

The combustible outer container can be formed from, for example, paper, cardboard, or plastics material, but is preferably a relatively stout paper sack. The paper of the paper sack preferably has a specific weight of from 80 to 110 grams per square metre. The paper sack can be coated, either internally or externally, with a polymeric film to inhibit or reduce moisture ingress or egress of odours. The polymeric film also increases the flammability of the paper and shortens ignition time. Typically the polymeric film can be, for example, a polyolefin such as polyethylene. The polymeric film is preferably applied to the internal surface of the paper sack and can be applied to the surface of the paper sack in an amount of from 5 to 60 microns per square metre of paper. The combustible outer container could be a twin ply paper sack in which each ply is made from paper with the weight mentioned above and each may be coated with the polymeric film.

The combustible outer container can, for example, be of square or rectangular transverse cross section and preferably has its height as its largest dimension. Typically the outer container will have a rectangular

transverse cross section, preferably having a base of 280 mm± 50 mm by 150 mm ± 50mm and a height of 200 mm ± 50 mm.

The outer container is preferably filled from the bottom, as will be more particularly described henceforth, and when full may be folded or taped shut. The act of folding the outer container to close it preferably leaves tabs for igniting the container as will also be described henceforth.

The charge of solid fuel pieces can comprise any suitable combustible material, for example, coals and/or cokes, but is preferably a briquetted solid fuel. Very good results have been obtained using briquetted solid fuel sold under the trademarks Homefire and Homefire Ovals by CPL Industries Limited.

The readily ignitable, particulate starter fuel can be of any suitable type, but is preferably a charcoal-based fuel. Preferably the charcoal is impregnated with wax or another suitable ignition enhancer. The particles of the starter fuel preferably have a mesh size of from about 10 mm to about 30 mm. Although it may be possible in certain circumstances to use a wider particle size range, for example, up to 50 mm mesh size, it is usually not advisable to use smaller sizes because particles which are too small fall through the grate into the ash pan without contributing to the ignition effort and particles which are too large make packaging more difficult and are slower themselves to ignite.

The use of particles within the preferred mesh size range also provides a relatively large surface area for wax absorption.

The relative masses of the solid fuel pieces and the particulate starter fuel are also important. Increasing the mass of the starter fuel gives a faster ignition time but a shorter burn time. A burn time of at least 2 hours, preferably at least 3 ½ hours is desirable and accordingly the ratio of the mass of the starter fuel to the mass of the solid fuel pieces is preferably from 1:5 to 1:14, for example about 1:7. The total mass of fuel in the fuel package is preferably from 3 to 5 kg, for example about 4 kg. Most preferably the quantity of starter fuel is from 250 gm to 750 gm and the quantity of solid fuel pieces is from 3.5 kg to 4.0kg. As an example, using the preferred ratio, a 4 kg fuel package would comprise 500 gm of particulate starter fuel and 3.5 kg of solid fuel pieces.

Preferably the perforated, combustible separator layer forms part of an inner container for the particulate starter fuel and the invention will hitherto be more particularly described in relation thereto. The inner container preferably entirely surrounds the particulate starter fuel, although this is by no means essential. Without wishing to be bound by any particular theory, it is believed that the improved results obtained with a fuel package according to the invention derive at least in part from the fact that the starter fuel is concentrated in one location in the package and therefore burns to generate a more intense heat than if the starter fuel particles were to be distributed throughout the package.

The inner container can be formed from paper, cardboard or plastics material, but again is preferably formed from stout paper, preferably having a specific weight of from

60 to 90 grams per square metre. The inner container is preferably of rectangular or square transverse cross section and preferably has dimensions of 70 mm ± 25 mm by 140 mm ± 25 mm by 260 mm ± 25 mm.

The inner container is perforated to permit air flow to the starter fuel and to provide edges to assist the combustion process. Preferably the perforations are regularly distributed across the surface of the inner container and preferably have a diameter of from 5 mm to 15 mm, for example about 10 mm. Preferably the perforations occupy from 5 to 20 % of the surface of the inner container.

In a particularly preferred embodiment, the fuel package is assembled such that the inner container enclosing the readily ignitable, particulate starter fuel rests at the bottom of the combustible outer container and lies beneath the bulk of the charge of solid fuel pieces. Preferably the inner container is in intimate contact with the outer container when assembled, although a minor proportion of the solid fuel pieces, for example, up to about 10 pieces may, however, lie beneath the inner container in certain embodiments.

As previously mentioned the outer container is preferably provided with flaps at opposed bottom edges which serve as fuses. The flaps can be created by folding the edges of the outer container, for example, when the outer container is sealed. Alternatively the flaps can be created by using a paper crepe stitching tape during the outer container sealing operation. Where the bottom of the outer container is rectangular, the flaps are preferably positioned on the shorter edges in order that

the sides of the outer container will burn first leaving the front intact and helping to arrest any forward collapse of the solid fuel pieces. Preferably the outer container is so dimensioned that as it collapses the charge of solid fuel pieces forms a pyramid with the inner container enclosing the readily ignitable particulate starter fuel at its centre.

It has been found that the intense heat evolved from burning waxed charcoal is much greater than that produced by conventional fire lighters and helps to evaporate any moisture present more quickly, thereby reducing ignition time. Preferably the moisture content of the solid fuel pieces is not more than 10%, more preferably not more than 7%.

An embodiment of a fuel package according to the invention will now be described, by way of example only, with reference to the accompanying Drawings in which:

Figure 1 shows a perspective view of an outer container for use in a fuel package according to the invention prior to assembly;

Figure 2 shows a perspective view of a perforated inner container for use in a fuel package according to the invention prior to assembly;

Figure 3 shows a perspective view of the assembled fuel package;

Figure 4 shows a perspective view of a fuel package according to the invention ready for ignition, illustrating the position of the fuel components; and

Figure 5 shows four stages in the manufacture of an alternative embodiment of the fuel package.

Referring firstly to Figure 1, the combustible outer container 1 comprises a stout paper sack, formed from paper of weight 100 grams per square metre, with an open top 2 and fold lines 3. The dimensions of the paper sack 1 are 280 mm by 150 mm by 200 mm. The inner container, illustrated in Figure 2, is formed from stout paper of weight 75 grams per square metre and has 1 cm diameter circular perforations over its entire surface. The perforations occupy 9 % of the surface area of the inner container. The dimensions of the inner container are 270 mm by 130 mm by 40 mm.

The fuel package is assembled by first filling the paper sack 1 with briquetted solid fuel pieces 4, as shown in Figure 4, until the sack 1 is roughly ¾ full. At this point the perforated inner container 5 containing particles of waxed lump charcoal (not shown) is placed into the sack 1 on top of the solid fuel pieces. A suitable waxed lump charcoal is sold by Chartan Aldred under the trade name "Instant Lite Charcoal". Around six solid fuel pieces may be placed on top of the perforated paper sack 5. When assembled the sack 1 contains 3.5 kgs of briquetted solid fuel, preferably Homefire or Homefire Ovals manufactured by CPL Industries Limited, and 500 gm of waxed lump charcoal.

The edges 8 of the sack opening are sealed using a sewn crepe stitching tape 8a. The sack 1 is now folded about the fold lines 3 of Figure 1 to produce the assembled fuel package as shown in Figure 3. It will be noted that the tabs 6 are folded down and lightly adhered to the sides 7 of the sack 1. In an alternative construction

the sack 1 can be sealed with an adhesive tape (not shown) applied over the edges 8 of the sack opening. The adhesive sealing tape may also be used to hold down the flaps 6.

In use, the fuel package is inverted as shown in Figure 4 and the flaps 6 released from the sides 7. The fuel package can then be placed in a grate and the flaps 6 ignited. In order to assist ignition the crepe stitching tape 8a or the adhesive tape may be extended to form a fuse, or a separate fuse (not shown) may be provided. To further assist ignition, the crepe stitching tape may be impregnated with wax.

As the tabs 6 burn, the area of ignition soon reaches the edges 7 of the sack 1 and the waxed lump charcoal in the perforated inner sack 5 is quickly ignited. Air is drawn through the perforations 9 and the charcoal burns with an intense heat which speedily drives off any moisture present in the briquetted solid fuel so that it in turn becomes ignited. The front face 10 of the sack 1 remains intact for a sufficient time to allow the briquetted solid fuel pieces to collapse into a pyramid without toppling forward.

It has been found that with preferred embodiments of fuel packages according to the invention the ignition time can be substantially reduced by comparison with conventional fuel packages. Ignition times of 30 minutes, 20 minutes, and even 10 minutes can be achieved in some circumstances.

The performance of fuel packages in accordance with the invention are illustrated in the accompanying tables.

Table 1 shows the effect of varying the relative masses of the lump wood charcoal and briquetted solid fuel (Homefire). It can be seen that whilst increasing the relative mass of the waxed lump wood charcoal reduces the ignition time the total burn time is also reduced and an optimum is achieved with a ratio of around 1:7. Increasing the mass of the briquetted solid fuel also increases the burn time but this larger mass may be too large for an average sized domestic open fire.

Table 2 shows the effect of moisture content on the ignition time. It is apparent that the lower the moisture content the shorter is the ignition time.

Table 3 shows the effect of using a perforated sack for containing the waxed lump wood charcoal. The perforations reduce the time for the heat output to reach 100 W/m^2 from 43 minutes to 9 minutes using a single skin outer sack.

Table 4 shows the effect of a polyethylene coating on the outer sack. A further slight improvement in ignition time is obtained when the polyethylene coating is present.

Figure 5 shows four stages in the manufacture of an alternative embodiment of the fuel package. In this embodiment, the combustible outer container 1' comprises a twin ply stout paper sack, rather than the single ply sack illustrated in Figure 1. The paper sack is a pillow sack which is completely flat when empty but which can be opened into a flat bottom sack prior to filling. As the sack is opened, it becomes shorter. As supplied, when flat, the sacks are 480 mm long. Once opened, the sacks are 410 mm long. After filling, removal of waste paper

and stitching, the sacks are approximately 370 mm long. The fuel package of Figure 5 is filled in the same manner as the embodiment illustrated in Figure 1 and described with reference thereto. In summary, the bag is firstly filled as shown at a), with briquettes 4 and then charcoal in a perforated envelope 5. Secondly, as shown at b), the bag is trimmed and stitched. Thirdly, as shown at c), the bag is inverted and finally, as shown at d), the bag is compacted. In contrast to the embodiment illustrated in Figure 1, the fuel package of Figure 5 has a tapered upper end, tapering to a string handle 11.

The reader's attention is directed to all papers and documents which are filed concurrently with or previous to this specification in connection with this application and which are open to public inspection with this specification, and the contents of all such papers and documents are incorporated herein by reference.

All of the features disclosed in this specification (including any accompanying claims, abstract and drawings), and/or all of the steps of any method or process so disclosed, may be combined in any combination, except combinations where at least some of such features and/or steps are mutually exclusive.

Each feature disclosed in this specification (including any accompanying claims, abstract and drawings), may be replaced by alternative features serving the same, equivalent or similar purpose, unless expressly stated otherwise. Thus, unless expressly stated otherwise, each feature disclosed is one example only of a generic series of equivalent or similar features.

The invention is not restricted to the details of any

foregoing embodiments. The invention extends to any novel one, or any novel combination, of the features disclosed in this specification (including any accompanying claims, abstract and drawings), or to any novel one, or any novel combination, of the steps of any method or process so disclosed.

Table 1

Ignition performance tests on blends of Homefire and Waxed Lumpwood Charcoal packed in an "Instant light" bag

TABLE A - Comparison of different charcoal / Homefire blend combinations

Tests carried out on an openfire appliance and output measuring system conforming to BS3142 part 3 requirements

Mass of waxed lumpwood charcoal	Mass of Homefire	Moisture content of Homefire (%)	Time for output to reach 100W/m² mins	200W/m² mins	315W/m² mins	630W/m² mins	Maximum output W/m²	Time for output to fall back to 500W/m² mins	315W/m² mins
0.375	3.0	10	25	30	38	-	-	-	-
0.375	3.0	10	15	26	37	-	-	-	-
0.375	3.0	10	16	26	35	-	521	86	188
0.375	3.5	10	23	28	37	-	-	-	-
0.375	3.5	10	25	32	40	-	-	-	-
0.375	3.5	10	16	24	33	-	754	170	250
0.375	4.0	10	26	39	43	-	-	-	-
0.375	4.0	10	18	29	37	-	-	-	-
0.375	4.0	10	16	26	32	48	823	188	232
0.500	3.0	10	-	10	16	-	-	-	-
0.500	3.0	10	-	12	16	-	-	-	-
0.500	3.0	10	-	13	21	44	758	114	179
0.500	3.5	10	4	17	22	-	-	-	-
0.500	3.5	10	-	10	15	-	-	-	-
0.500	3.5	10	8	14	19	30	843	129	227
0.500	4.0	10	9	17	22	-	-	-	-
0.500	4.0	10	10	17	21	-	-	-	-
0.500	4.0	10	14	23	29	39	1026	162	263
see note 5 0.000	7.2	9.5	21	30	38	51	-	-	-
see note 5 0.000	7.0	3	15	24	29	39	-	-	-
				see note 1	see note 2			see note 3	see note 4

Notes

The arrangement of fuel in the bag of 6 briquettes on the base, charcoal layer, then rest of briquettes on top was arrived at as the most effective when using the available bags. A more simplified packing method may be possible using other types of bag.

1. 200w/m² represents an output at which the fire appears to be well alight.
2. BS 3142 part 3 specifies that ignition is completed when the radiant output measured from the fire reaches 630 w/m2 using an initial charge of 0.0115m3 (equivalent to approximately 7 kg of Homefire). 315 w/m² represents a radiant output equivalent to the BS 3142 part 3 ignition output achieved using approximately half the charge weight
3. At an output of 500 w/m² the fire is still producing useful heat.
4. At an output of 315 w/m² the fire is still recoverable on refuel.
5. These tests were carried out in accordance with BS 3142 part 3, igniting the fuel using 113 litres of gas.

Table 2

(R)

Ignition performance tests on blends of Homefire and Waxed Lumpwood Charcoal packed in an "Instant light" bag

TABLE B - Comparison of effects of varying moisture content of Homefire

Mass of waxed lumpwood charcoal	Mass of Homefire	Moisture content of Homefire (%)	Time for output to reach		
			100W/m² mins	200W/m² mins	315W/m² mins
0.500	3.5	3.5	3	12	16
0.500	3.5	3.5	6	12	15
0.500	3.5	3.5	3	7	15
average			4	10	15
0.500	3.5	6.0	7	14	19
0.500	3.5	6.0	6	15	21
0.500	3.5	6.0	7	14	20
average			7	14	20
0.500	3.5	9.0	10	16	22
0.500	3.5	9.0	8	16	21
0.500	3.5	9.0	10	16	26
average			9	16	23

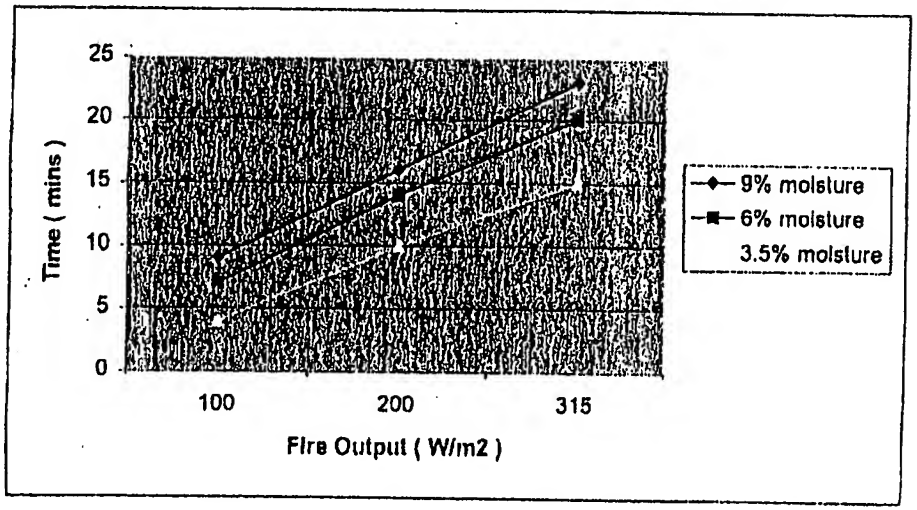


Table 3

Ignition performance tests on blends of Homefire and Waxed Lumpwood Charcoal packed in an "Instant light" bag

TABLE C - Comparison of effect of using an inner charcoal envelope

Type of bag used	Mass of waxed lumpwood charcoal	Mass of Homefire	Moisture content of Homefire (%)	Time for output to reach		
				100W/m² mins	200W/m² mins	315W/m² mins
solid inner charcoal bag	0.500	3.5	10.0	18	23	28
single skin outer bag	0.500	3.5	10.0	29	40	46
	0.500	3.5	10.0	82	88	95
	average			43	50	56
perforated (40x10mm holes	0.500	3.5	10.0	9	18	22
inner charcoal bag	0.500	3.5	10.0	9	19	25
single skin outer bag	0.500	3.5	10.0	10	19	26
	average			9	19	24
perforated (40x10mm holes	0.500	3.5	10.0	16	27	33
inner charcoal bag	0.500	3.5	10.0	16	27	32
double skinouter bag	0.500	3.5	10.0	21	30	36
	average			18	28	34

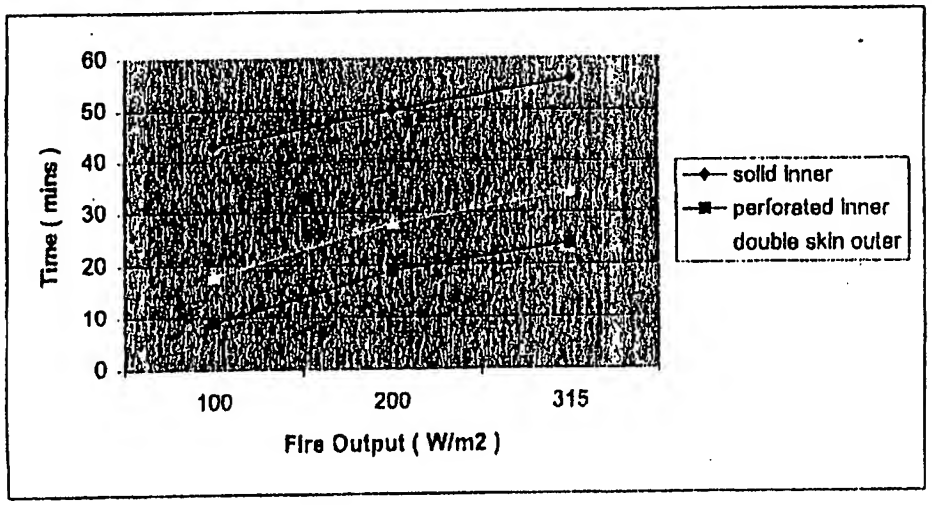


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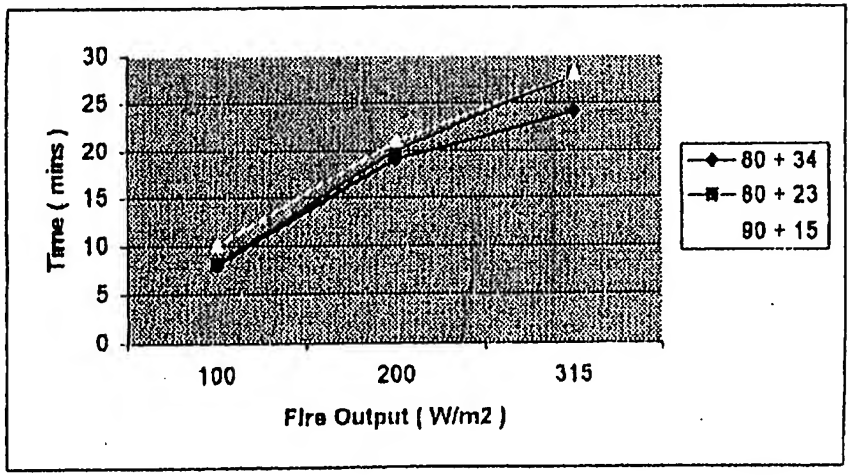
Table 4

Ignition performance tests on blends of Homefire and Waxed Lumpwood Charcoal packed in an "Instant light" bag

TABLE D - Comparison of effect of using polyethylene coated outer bags with perforated inner charcoal bag

Type of outer bag used	Mass of waxed lumpwood charcoal	Mass of Homefire	Moisture content of Homefire (%)	Time for output to reach 100W/m² mins	200W/m² mins	315W/m² mins
80 + 34 stripped from double skin bag	0.500	3.5	11.5	4	17	22
	0.500	3.5	11.5	11	20	26
	0.500	3.5	11.5	8	20	25
	average			8	19	24
80 + 23 stripped from double skin bag	0.500	3.5	11.5	6	20	28
	0.500	3.5	11.5	9	21	27
	0.500	3.5	11.5	10	19	28
	average			8	20	28
80 + 15 supplied	0.500	3.5	11.5	9	21	30
	0.500	3.5	11.5	11	22	26
	0.500	3.5	11.5	11	20	29
	average			10	21	28



CLAIMS

1. A fuel package which comprises:
a combustible outer container; enclosed within the outer container a charge of solid fuel pieces and a readily ignitable particulate starter fuel; and a perforated, combustible separator layer disposed between the solid fuel pieces and the readily ignitable, particulate starter fuel.

2. A fuel package according to claim 1, in which the combustible outer container comprises a relatively stout paper sack.

3. A fuel package according to claim 2, in which the paper of the paper sack preferably has a unit weight of from 80 to 110 grams per square metre.

4. A fuel package according to claim 2 or 3, in which the paper sack is coated, either internally or externally, with a polymeric film to inhibit or reduce moisture ingress or egress.

5. A fuel package according to claim 4, in which the polymeric film is applied to the paper sack internally in an amount of from 5 to 60 microns per square metre.

6. A fuel package according to claim 4, in which the polymeric film is polyethylene.

7. A fuel package according to any of the preceding claims in which the combustible outer container is of square or rectangular transverse cross section.

8. A fuel package according to claim 7, in which the outer container is rectangular and has a base of 280 mm ± 50 mm by 150 mm ± 50 mm and a height of 200 mm ± 50 mm.

9. A fuel package according to any of the preceding claims, in which the charge of solid fuel pieces comprises a briquetted solid fuel.

10. A fuel package according to any of the preceding claims, in which the separator layer forms part of an inner container for the particulate starter fuel.

11. A fuel package according to claim 10, in which the inner container entirely surrounds the particulate starter fuel.

12. A fuel package according to any of the preceding claims, in which the perforated, combustible separator layer or inner container is formed from relatively stout paper.

13. A fuel package according to claim 12, in which the paper of the separator layer or inner container has a unit weight of from 60 to 90 grams per square metre.

14. A fuel package according to claims 11 or 12, in which the inner container is of rectangular or square transverse cross section.

15. A fuel package according to claim 14, in which the inner container is of rectangular transverse cross-section and has dimensions of 70 mm ± 25 mm by 140 mm ±

25 mm by 260 mm ± 25 mm.

16. A fuel package according to any of the preceding claims, in which the perforations are regularly distributed across the surface of the separator layer or inner container.

17. A fuel package according to any of the preceding claims, in which the perforations have a diameter of from about 5 mm to 15 mm.

18. A fuel package according to claim 17, in which the perforations occupy from 5 to 20 % of the surface of the separator layer or inner container.

19. A fuel package according to any of the preceding claims, in which the readily ignitable, particulate starter fuel is a charcoal-based fuel.

20. A fuel package according to claim 19, in which the charcoal is impregnated with wax or another suitable ignition enhancer.

21. A fuel package according to any of the preceding claims, in which the particles of the starter fuel have a mesh size of from about 10 mm to about 30 mm.

22. A fuel package according to any of the preceding claims, in which the fuel package has a burn time of at least 2 hours.

23. A fuel package according to any of the preceding claims, in which the ratio of the mass of the starter

fuel to the mass of the solid fuel pieces is from 1:5 to 1:9.

24. A fuel package according to any of the preceding claims, in which the total mass of fuel in the fuel package is from 3 to 5 kg.

25. A fuel package according to any of claims 10 to 24, in which the fuel package is assembled such that the inner container enclosing the readily ignitable, particulate starter fuel rests at the bottom of the combustible outer container and lies beneath the bulk of the charge of solid fuel pieces.

26. A fuel package according to any of the preceding claims, in which the outer container is provided with flaps at opposed bottom edges which serve as fuses.

27. A fuel package according to claim 26, in which the flaps are created by folding the edges of the outer container.

28. A fuel package according to claim 26, in which the flaps are created by using a paper crepe stitching tape during the outer container sealing operation and, preferably, in which the paper crepe stitching tape is impregnated with wax.

29. A fuel package according to any of claims 26 to 28, in which the bottom of the outer container is rectangular and the flaps are positioned on the shorter edges of the rectangular bottom.

30. A fuel package according to any of claims 10 to 29, in which the outer container is so dimensioned that, when

ignited, as it collapses the charge of solid fuel pieces forms a pyramid with the inner container enclosing the readily ignitable particulate starter fuel at its centre.

31. A fuel package according to any of the preceding claims, in which the moisture content of the solid fuel pieces is not more than 10%.

32. A fuel package according to any of the preceding claims, substantially as described in the Example.

33. A short ignition time, long burn time fuel package substantially as hereinbefore described.

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Application No:	GB 0121567.2	**Examiner:**	Darren Handley
Claims searched:	1-33	**Date of search:**	21 March 2002

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Databases searched:

UK Patent Office collections, including GB, EP, WO & US patent specifications, in:

UK Cl (Ed.T): B8C (CWA1), C5G (GEA)

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Other:

Documents considered to be relevant:

Category	Identity of document and relevant passage		Relevant to claims
X	GB 2204057 A	(FIBA) - see page 2, lines 23-27 and page 5, lines 1-15 and claim 3.	1 at least
X	GB 0989421 A	(ALEXANDER) - see figure 1 and claim 1	1 at least

X	Document indicating lack of novelty or inventive step	A	Document indicating technological background and/or state of the art.
Y	Document indicating lack of inventive step if combined with one or more other documents of same category.	P	Document published on or after the declared priority date but before the filing date of this invention.
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